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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,400	01/03/2001	Michael Mesh	S0489/7008 GSE	1928

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DENNISON, SCHULTZ, DOUGHERTY & MACDONALD  
1727 KING STREET  
SUITE 105  
ALEXANDRIA, VA 22314

EXAMINER

ELALLAM, AHMED

ART UNIT	PAPER NUMBER
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2616

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Please find below and/or attached an Office communication concerning this application or proceeding.

8/1

<b>Office Action Summary</b>	Application No. 09/753,400	Applicant(s) MESH ET AL.	
	Examiner AHMED ELALLAM	Art Unit 2668	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17:2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

Responsive to RCA filed on 01/10/2006.

Claims 1-19 are pending.

### ***Claim Rejections - 35 USC § 112***

1. Claims 1-11, 17-18 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 17, the specification as originally filed does not describe the segmenting a bit stream into variable length segments in accordance with available transmission bandwidth.

Claims 1-11, 18 depends from claim 17, thus they are subject to the same rejections.

Regarding claim 18, In addition to the above, the specification as originally filed does not describe the claimed "the incoming bit stream of data comprises at least two services". The specification doesn't describe how an incoming bit stream that comprises at least two services is segmented?

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

In the following rejection claim 17 is interpreted in light of the specification (page 6, lines 8-1, that is the claimed “receiving an incoming bit stream of data of at least one service, segmenting said bit stream in its original protocol into variable length segments according to available transmission bandwidth” is interpreted to mean “receiving segmented bit stream and isolating each segment of the received segmented bit stream”.

3. Claims 1, 3, 4, 7-10, 12-16, and 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ravikanth, US (6,331,978).

Regarding claim 17, Ravikanth discloses a method for packet processing for data transmission over an optical fiber, the method comprising:

adding a label to the front of a datagram, see column 3, lines 30-35. (Claimed adding a tag to a header of each segment, each tag including data identifying a route between a source and destination). (Examiner interpreted the label as the claimed tag, and the datagram as the segment), further Ravikanth discloses a data stream of variable size packets, the packets may be Ipv4 or IPv6 packets or they may be based on any other network layer protocol, see column 5, lines 39-41. (Claimed segmenting bit segment of variable length, since IP packets can have datagram of different length as suggested by the different size packets). (Examiner also interpreted the presence of datagram is preceded by a form of segmentation of a bit stream of data of at least one service).

Ravikanth further discloses that SONET is used for data transmission over optical fiber, see column 1, lines 19-22. (claimed processing each segment for transmission in a transmission frame, because SONET frames are used for the transmission of the datagrams);

Ravikanth method is intended for optimization of bandwidth utilization, (column 1, lines 13-29 and 60-67. (claimed whereby utilization of available bandwidth capacity is optimized).

Regarding claim 1, In addition to the above Ravikanth further discloses that packet over SONET/SDH uses PPP encapsulation, see column 5, lines 14-17, (Examiner interpreted the packet as been the datagram with the label (claimed segment

with the tag)), see column 5, lines 34-38. (Claimed encapsulating tagged segment into a point-point protocol (PPP) packet in a frame); Ravikanth further discloses that SONET is used for data transmission over optical fiber, see column 1, lines 19-22. (Claimed mapping the encapsulated packet into a transmission frame for transmission over an optical fiber).

Regarding claims 3 and 4, Ravikanth discloses using packet over SONET/SDH, see column 5, lines 14-17. (Claimed transmission frame is a Packet over SONET frame as in claim 3; and the transmission frame is a Packet over SDH frame, as in claim 4).

Regarding claim 7, Ravikanth discloses scrambling the payload of the packet, see column 5, lines 39-48. (Claimed scrambling the encapsulated packet before the step of mapping into a transmission frame).

Regarding claim 8, Ravikanth as discussed above, discloses adding a label to the front of a datagram, see column 3, lines 30-35, the label being an MPLS, see column 5, lines 52-56.

Regarding claim 9, claim 9 is rejected by way of symmetry since it has all the reverse steps of base claim 1.

Regarding claim 10, claim 10 has the step of de-scrambling, since the payload was scrambled (as indicated in claim 7), the reverse step of de-scrambling is necessary to recreate the original datagram.

Regarding claim 18, Ravikanth discloses that point-to-point protocol is deployed for new packet services see column 2, lines 1-9. (Since Ravikanth implicitly discloses receiving datagram of multiple services as suggested by the use of PPP links, see

column 5, lines 14-17). (Claimed incoming bit stream of data comprises at least two services).

Regarding claims 12 and 19, Ravikanth discloses the functions of claims 12 and 19 as discussed above with reference to respective claim 1 and 17, inherently Ravikanth has the corresponding module to implement them.

Regarding claim 13, Ravikanth as indicated above discloses encapsulating the labeled datagram using a PPP protocol framing.

Regarding claims 14 and 15, Ravikanth discloses using packet over SONET/SDH, see column 5, lines 14-17. (Claimed transmission frame is a Packet over SONET/SDH frame.

Regarding claim 16, Ravikanth disclose adding a label to the front of a datagram, wherein the label is MPLS label. See column 3, lines 30-35. (Claimed add MPLS tag to a header of each segment).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 5, 6, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravikanth US (6,331,978) in view of Ndousse et al, PPP Extensions for IP/PPP-HDLC over SONET-SDH/WDM, IEEE, 1999, pages 575-580.

Regarding claim 2, Ravikanth as indicated above discloses encapsulating the labeled datagram using a PPP protocol framing.

Ravikanth fails short of specifying that the PPP is a High bit rate Digital Link Control (HDLC). (Claimed tagged segment is encapsulated into PPP packet in a high bit rate Digital Link Control (HDLC)-like frame).

However, Ndousse discloses that encapsulating datagram into a PPP-HDLC frames is a preferred encapsulation mechanism. See left column, page 576, and first paragraph.

Therefore, it would have been obvious to an ordinary person of skill in the art, to use the PPP-HDLC encapsulation taught by Ndousse instead of the PPP of Ravikanth so that Ravikanth's system can be used for 802.3 LAN traffic (Ndousse). The advantage would be the ability to apply Ravikanth's encapsulation to Ethernet traffic for transport over fiber optics using SONET/SDH standards (Ndousse).

Regarding claims 5 and 6, Ravikanth discloses using packet over SONET/SDH, see column 5, lines 14-17. (Claimed transmission frame is a Packet over SONET frame as in claim 5; and the transmission frame is a Packet over SDH frame, as in claim 6).

Regarding claim 11, as discussed above with reference to dependent claims 2 and 5, Ravikanth in view Ndousse discloses encapsulating a labeled datagram in a PPP-(HDLC)-like using packet over SONET frames. However, Ravikanth in view Ndousse do not explicitly discloses the steps of de-packing, de-capsulating, stripping and assembling the datagram (segment). However Ravikanth in view Ndousse would naturally recognize the need to do these steps since they are inherently the reverse



steps implemented on the datagram. Such steps are needed to recover the original data stream.

### ***Response to Arguments***

5. Applicant's arguments filed 01/10/2006 have been fully considered but they are not persuasive:

The 112 2<sup>nd</sup> rejections are overcome in view of the amendment to claim 1.

Applicants argue on page 8 of the Remarks that *"The patent to Ravikanth utilizes datagrams which are pre-formed conventional packets, and can only be utilized with IP packets (packet-based services). The presence of a datagram does not teach or suggest receiving an incoming bit stream of data of at least one service, segmenting the bit stream in its original protocol into variable length segments, and adding an identifying tag, before processing the segment for transmission, as is claimed"*.

In response, Examiner notes that Applicants allegations are false in that the Examiner didn't alleged in any way that the **presence of a datagram** does teach and/or suggest receiving an incoming bit stream of data of at least one service, segmenting the bit stream in its original protocol into variable length segments, and adding an identifying tag, before processing the segment for transmission.

However, Applicants are right in stating: *"The patent to Ravikanth utilizes datagrams which are pre-formed conventional packets"*. This feature of Ravikanth represents Applicants core argument in which Applicants assume that pre-formed packets are different than the "novel" packets of the invention. Examiner disagrees

because the received bit stream already comprises segments as indicated in the specification, Examiner reiterate the argument presented in the last office action, in which Examiner indicated based on the specification that “the claimed **bit stream** can be (non-limiting example) of **received Ethernet frames, which** are received as a segment with the identifying information (source, destination, FCS ... etc). Therefore, the segmentation of the “bit stream” contains already pre-formed segment (as Applicants admit) that are identical to the received packets of *Ravikanth*.

Examiner in the last office action stated: *“it would have being impossible to recognize which service the bit streams belong to, unless there is an already established format...”* In response, Applicants argued that *“it may be true that each service has an established format by which it can be recognized, but recognizing which data service arriving has no relationship utilizing datagrams to making novel packets of variable bandwidth. In any event, “datagrams” are only relevant for Ethernet services, and not for TDM over SDH services for Storage, other types of services”*. Examiner respectfully disagrees, because even if *Ravikanth* is assumed to have only one service, it still reads on the claims because the claims do not specify different services with the exception of new added claim 18. In addition Applicants argument is not related to the claimed subject matter since no claim specify a TDM service as alleged, and thus the alleged “only one service” reads on the claimed “at least one service” as recited in independent claim 17.

Applicants further stated on page 10: *“Regarding the allegation that Ravikanth teaches encapsulation of datagrams of different lengths (figure 3), and that MPLS of*

*different length packets is clearly for different data services, this is also incorrect. To state that Ravikanth provides for different services regardless of the payload protocol type" indicates a misinterpretation of the reference, since while the payload being carried in Ravikanth can be "any network layer protocol," the protocols involved are only for IP service. The fact that Ravikanth doesn't look inside the payload, not only does NOT inherently provide for different services, but is only possible because he can process only a single service. Ravikanth thus takes pre-formed IP service packets and adds an MPLS label for label switching over serial links. Ravikanth's datagrams may, indeed, be of variable length, but they are received that way and transmitted that way, without regard to utilization of bandwidth".*

Again even if Ravikanth has only one service, it still reads on the claims (with the exception of new claim 18), because the claims do not specify different services as intended by Applicants. Nevertheless, Examiner traverses Applicants allegations in that Ravikanth deals only with one service (IP service), Applicant misinterpreted the teaching of Ravikanth, because if only one service is to be performed (IP service) then the teaching of the payload being carried in Ravikanth being "any network layer protocol," would make no sense since the IP-service correspond to only one network layer protocol. Stated differently, the payload being carried in Ravikanth can be "any network layer protocol" implicates that the payload belong to different service protocols. Moreover, Ravikanth discloses that point-to-point protocol is deployed for new packet services (see column 2, lines 1-9), thus Ravikanth implicitly provides for receiving

datagram of multiple services as suggested by the use of PPP links, (see column 5, lines 14-17).

In the previous office action, Examiner noted, "the claimed **bit stream** can be (non-limiting example) of **received Ethernet frames, which** are received as a segment with the identifying information (source, destination, FCS ... etc). Therefore, the segmentation of the "bit stream" is identical to the received packets of *Ravikanth*".

In response to *the Examiner*, Applicants argued, "The Ethernet frame is received and may be used, in its entirety, as a segment for purposes of the present method. However, as stated on page 6, lines 15-16, for services such as Ethernet, the segments can have variable length within the particular service, so the frame can be cut into several segments as required to optimize bandwidth. There is no indication in the present application that the format must be determined in advance, as is, indeed, the case in *Ravikanth*". Examiner respectfully disagrees, because the specification does not have support of cutting a frame into several segments; such argument is considered to be Applicants own conclusion and not evidence.

Applicants argue that Ndousse doesn't disclose forming novel packets of the invention, and thus the combination of *Ravikanth* and Ndousse doesn't result in the novel single or multi-service packets having segments of variable length in their original protocols, but only previously prepared, conventional single service packets.

Examiner respectfully disagrees, Examiner notes that *Ravikanth* does teach the single or multi-service packets having segments of variable length in their original protocols as indicated above, and that Ndousse does not need to teach what is already

taught by Ravikanth, Ndousse was used to complement Ravikanth of not explicitly teaching encapsulating datagram into a PPP-HDLC frames, however Ndousse provide such feature and a prima facie case of obviousness is believed to be properly established as indicated above.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Smith US (6,839,322); and Nigam et al, US (6,993,047).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM  
Examiner

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A handwritten signature in black ink, appearing to read 'H. Kizou', with a long horizontal stroke extending to the right.

**HASSAN KIZOU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**